IV. BUILDING INSPECTION

The Inspections Division of the Planning and Development Review Department is responsible for conducting field inspections of construction projects to confirm compliance with the City's adopted codes within the City limits and perform electrical and plumbing inspections in the extra-territorial jurisdiction (ETJ). This responsibility typically involves responding to specific inspection requests by driving to the construction site and conducting inspections to confirm the project is being built in accordance with the plans previously approved by staff in the Plan Review sections. For minor projects there may not be an approved set of plans so the burden of confirming code compliance is based on the code knowledge of the inspector when compared with the inspector's observations on the site.

The Inspections Division has placed a strong emphasis on ensuring the technical knowledge of their inspection staff as demonstrated by their practice of requiring inspectors to possess appropriate state and nationally recognized certifications and licenses. The Division has also implemented an innovative program to gain efficiency by distributing their inspection assignments electronically to their inspectors who are stationed in their inspection districts.

A. PROFILE

Organization

The organization for the Building Inspection Division is shown in Figure 15. The positions and functions are shown in Table 20. These may not match the current staffing but were accurate at the time we did our research.

Figure 15
Organization of Building Inspection Division

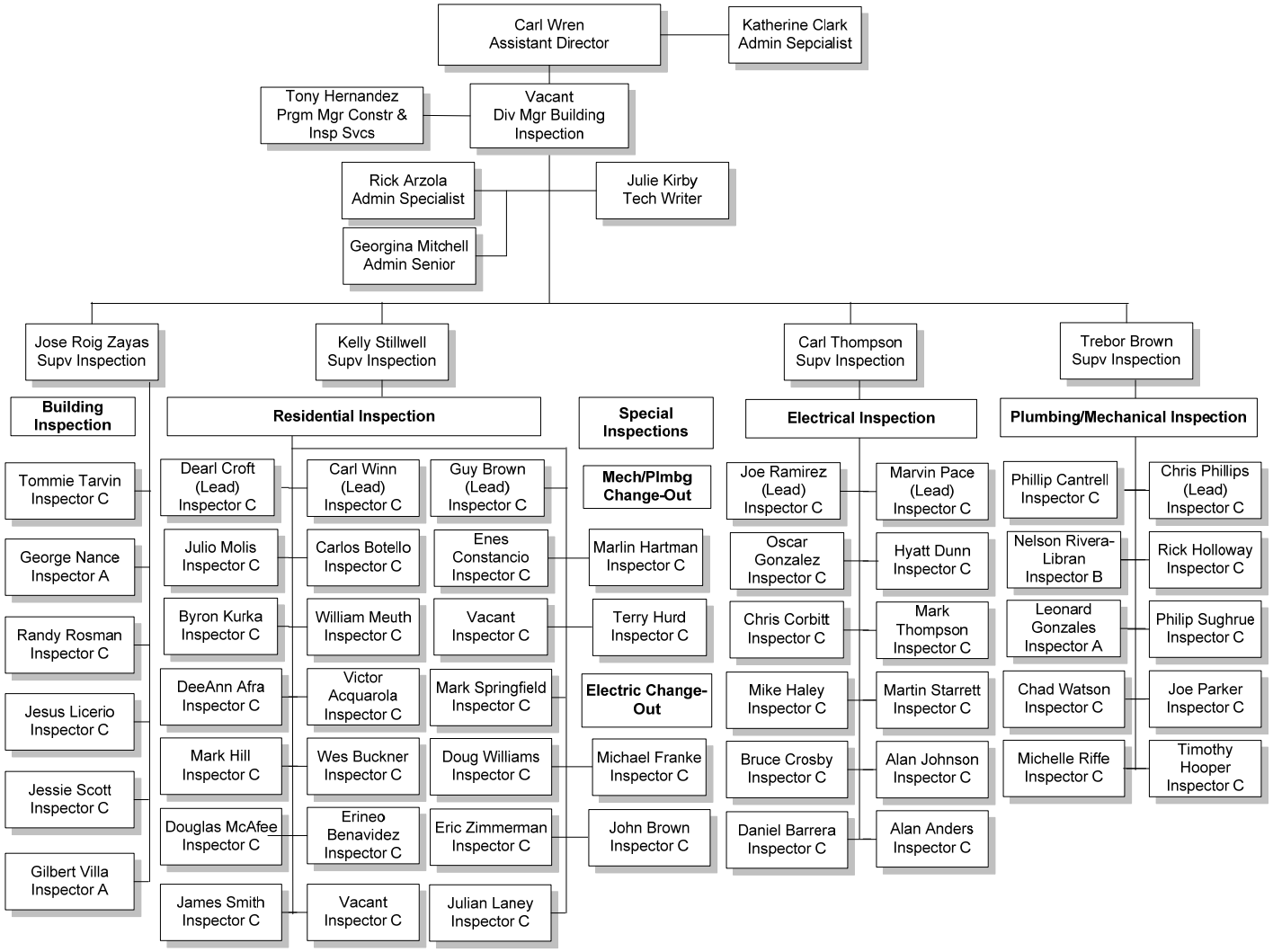

Table 20
Positions and Functions of Staff in Building Inspection Division

Position Title	Number of Positions	Responsibilities	Reports To
Assistant Director	1	Manages Building Inspection, Commercial Building Review, Permit Center, Residential Review, Site/Subdivision Inspections and is the Certified Building Official	Director

Position Title	Number of Positions	Responsibilities	Reports To
Div Mgr. Building Inspection	1	Manages the Building Division	Assistant Director
Progm Mgr. Constr & Inspe.Svcs	1	Ensures compliance with Codes and resolves customer complaints, Assists Division Manager	Div Mgr. Building Inspection
Admin Specialist	1	Provides administrative support to Division staff	Div Mgr. Building Inspection
Admin Senior	1	Provides administrative support to Division staff and acts in lead capacity	Div Mgr. Building Inspection
Tech Writer	1	Develops materials for publication and creates and distributes detailed activity reports	Div Mgr. Building Inspection
Building Inspection			
Supr. Inspection	1	Supervises day-to-day activities of Commercial Building Inspectors Section	Div Mgr. Building Inspection
Inspector A	2	Entry level Building Inspector performs basic building inspection activities	Supr. Inspection
Inspector C	4	Building Inspector performs building inspections on more complex projects based on job experience and attainment of nationally recognized certifications	Supr. Inspection
Residential Inspection and Special Inspections			
Supr. Inspection	1	Supervises day-to-day activities of the Residential Combination Inspectors Section	Div Mgr. Building Inspection
Residential Inspection			
Inspector C	21	Combination Inspector performs building, plumbing and mechanical inspections on one and two family residential projects. Inspectors must possess both Texas Inspector Licenses and other related nationally recognized certifications	Supr. Inspection

Position Title	Number of Positions	Responsibilities	Reports To
Mech/Plmbg Chang-Out			
Inspector C	2	Provides inspections for water heater change outs on an appointment only basis	Supr. Inspection
Electric Change Out			
Inspector C	2	Provides inspections for electrical change outs on an appointment only basis	Supr. Inspection
Electrical Inspection			
Supv. Inspection	1	Supervises day-to-day activities of the Electrical Inspectors Section	Div Mgr. Building Inspection
Inspector C	12	Performs electrical inspections of both residential and commercial projects. Must possess Texas State Inspector License with experience as Journeyman or Master Electrician	Supv. Inspection
Plumbing/Mechanical Inspection			
Supv. Inspection	1	Supervises day-to-day activities of the Plumbing/Mechanical Inspectors Section	Div Mgr. Building Inspection
Inspector A	1	Entry-level Plumbing/Mechanical Inspector may not have attained required Texas State Plumbing Inspector License. Performs inspections on less complicated projects	Supv. Inspection
Inspector B	1	Plumbing/Mechanical Inspector with intermediate level of experience and certifications	Supv. Inspection
Inspector C	8	Plumbing/Mechanical Inspector with highest levels of State Licenses and national certifications assigned to most complex commercial and large residential projects	Supv. Inspection

B. POSITIVE FINDINGS

- City pays for Inspection and Plan Review certifications, renewals, and required training;
- City pays skill-based pay to building inspectors for certifications;
- Residential inspectors are cross-trained in four disciplines and perform combination inspections;
- City tracks status of employee certifications to ensure CEUs are earned to qualify for certification renewals;
- Inspection Sections place emphasis on achieving State and National Certification to demonstrate competency;
- The City utilizes technology to enhance inspector productivity by sending their daily inspection workload electronically to their field computers and thereby avoiding the need for every inspector to come to the main office to receive their daily assignments;
- City has adopted a Registered Industrial Plant Program that allows qualifying facilities to avoid the need to obtain permits for work that is inspected by an in-house certified electrical inspector;
- The Inspection Sections Supervisors (Residential and Commercial) receive comprehensive weekly and monthly activity reports that measure performance against established standards. Great emphasis is placed on tracking ability to meet expectation of providing next day inspection;
- Customers can use either the City's Interactive Voice Response (IVR) system or an on-line approach to request inspections. A customer instruction page has been provided on the Department website;
- The Commercial Inspections Division has created numerous flow-charts that serve as checklist for inspectors to use to confirm they are performing a comprehensive inspection in the field; and
- Inspectors can e-mail correction notices to contractors while still in the field.

C. ORGANIZATION ISSUES

Boards and Commissions

The Building Inspection Division provides support to the Building and Fire Code Board of Appeals, the Electric Board, and the Mechanical, Plumbing and Solar Board. The description of each of these Boards and our specific recommendations are provided under the Boards and Commissions section of the report. In summary, we believe the three

Boards should be consolidated and the language in the adopting ordinances and by-laws be updated to reflect these changes.

Under the new City structure discussions are underway to merge these three Boards and we are highly supportive of this approach. As part of this study we did interview the chairperson of each Board. Based on our review we suggest:

59. ***Recommendation:*** **Combine the Building and Fire Board of Appeals, the Electric Board, and the Mechanical, Plumbing and Solar Board.**

Inspector Office Space

The Department has taken a very good approach in improving the overall effectiveness of the inspection program by increasing the amount of field time available to the inspectors. Through the use of technology, inspectors are not required to drive to the main office every day in order to retrieve their daily inspection workload. The inspector's daily inspection schedule is sent to their field computers electronically and is immediately available to them upon their arrival at the various sites where the City inspection vehicles are stored overnight. This process allows inspectors to park their vehicles within or near their assigned inspection districts, which increases the amount of time the inspectors may spend within their assigned inspection district. This arrangement dramatically reduces the morning and afternoon competition for parking spaces between customers and inspectors at the main office and also eliminates the need to provide a large office space that would have been otherwise required for all inspectors to gather at once to receive their inspection schedules. Under this arrangement individual field inspectors are only required to come to the main office one morning a week to meet with their supervisor.

Given that each inspection group only comes to the main office once per week for a one-hour group meeting, we were surprised to find that the inspector's area contains numerous work cubicles equipped with desks, computers, and landline phones. Interviews with staff revealed that these spaces are rarely utilized. We recommend that those cubicles be removed and a more open floor plan be created that would better serve the needs of a single inspector group gathering for a one-hour morning meeting. This type of remodel should free up space that could be used to provide better office configurations for the staff that is assigned full-time to the main office and provide a private conference room that could be utilized by supervisors when confidential meetings are required.

60. ***Recommendation:*** **The Inspector's office space should be remodeled to eliminate the individual cubicles that are rarely used and replaced with an**

open floor plan that better accommodates group meetings. It should include appropriate office spaces for all inspection staff assigned to the main office and a private conference room.

Job Descriptions

The City of Austin has chosen to establish minimum inspector certification requirements by incorporating them into the Municipal Code. Nationally the practice has been to identify these minimum requirements in the approved individual job descriptions that are readily accessible on the jurisdiction's website. This practice makes it much easier for potential job applicants to identify the minimum job requirements and also makes the process of modifying job descriptions less burdensome than adopting new ordinance language.

61. ***Recommendation:*** **The Building Official should relocate the minimum inspector qualifications from the adopted ordinances and place them in the approved job descriptions.**

Several sections of the Municipal Code establishes minimum qualifications for inspector positions that are inconsistent with national best practices. Examples include requiring a minimum of (1) one year of experience as a supervisor prior to appointment as a Residential Building Inspection Supervisor or as a Commercial Mechanical Inspector. A literal reading of these requirements would necessitate that an existing employee leave the City to obtain a supervisory role in another jurisdiction before they could qualify to be promoted in the City of Austin. This language precludes an existing employee from being promoted from within the organization. It may have been the intent of the authors of this language to require that a prospective supervisor have actual supervisory experience while they worked in the private sector, but that approach works to the disadvantage of existing employees who did not come to the City with prior supervisory experience. The City should have the ability to accept an equivalency to this requirement such as having attended the City's Supervisor Academy.

62. ***Recommendation:*** **The Building Official should review the Municipal Code and add an "or equivalency" clause to the need for prior supervisory experience in order to be hired as a supervisor or entry level inspector.**

Performance Standards

Table 21 below includes those items the Department currently considers performance standards for the Inspections Group. Our review of these "standards" suggests that most of the identified measures are in fact simply measurements of activity levels. The exception to this statement is the performance standards to provide next-day inspections a minimum of 90% of the time, and the failure rate for residential inspections. While the other information on the table provides useful insights regarding potential trends in activity levels, they don't actually represent performance standards. These "standards" should be replaced with performance standards that are more indicative of the desired level of service to be achieved. While the performance standard for next-day inspections should be retained, additional standards should be added that monitor the quality of inspection services being provided. Such standards should include the results of customer satisfaction surveys, the frequency and results of a supervisor audit program, and the percent of staff fully certified to perform their assigned inspection duties.

Table 21
Performance Standards For Building Inspection

One-Stop-Shop	2011	2012	2013	2014	2015
FTEs	51	51	60	60	60
Citywide Cost per inspection	$31.12	$28.07	$26.66	Not tracked	
# of inspections	161,519	186,737	220,881	228,314	230,000
# fire technical inspections	7,645	9,633	10,636	10,945	10,500
# initial food establishment inspections	402	493	491	607	
% building inspections performed within 24 hrs. of request	94%	94%	91%	91%	90%
% residential inspections that fail	24%	24%	26%	26%	

The Building Inspection Section has placed great emphasis on having the inspectors meet their established performance standard of providing next-day inspections. Each inspector's ability to provide the inspection on the day requested is tracked on both an individual basis and for the Section as a whole. The records provided to us indicate they are able to achieve this performance standard in excess of 90% percent of the time. We strongly support management's commitment to providing next day inspections and their dedication to tracking and reporting this information.

While we support the establishment of next-day inspections as a performance standard, without also considering the importance of maintaining quality standards, the intense focus on meeting this single performance standard can overshadow other important goals of the Department. The need for a comprehensive supervisor-auditing program as a means of ensuring that inspection quality does not suffer is discussed elsewhere in this report.

The supervisors currently assigning the daily workloads for the inspectors appear to have established the number of inspections a specific inspector can consistently complete within their daily available work hours. Meeting the next-day inspection standard does not, however, give any indication of the quality of inspections being performed by individual inspectors. This arrangement lends itself to assigning fewer inspections to poorly performing inspectors and loading up inspections on highly efficient inspectors. The performance standards established by the Inspection Section should be expanded to include not only quantitative measures but also measures to confirm quality of inspections. Such measures could include not exceeding a specified number of deficiencies observed by supervisors during field audits and achieving a high level of customer satisfaction as reflected on customer comment surveys that are mailed to contractors after jobs have been completed.

63. ***Recommendation:*** **The Building Official should augment the current qualitative performance standards for next-day inspections with an qualitative standard to ensure quality inspections.**

The other actual inspection related performance standard that the Department is tracking is the failure rate for residential inspections. This rate is higher than we have seen in other jurisdictions and has increased over the last several years. A high rate of failed inspections has a significant impact on staff resources because it requires staff to revisit the site on some future date. While it is not possible to eliminate all failed inspections, when the failure rate reaches these levels, then some effort should be applied in determining the source of these failures. It has been reported by staff and customers that one source of these failures is the practice of contractors calling for an inspection prior to the work being ready for inspection because the contractors anticipate they will not actually receive the inspection on the day they requested it. By doing so, they are virtually guaranteed to receive the inspection within 48 hours of their request. It is reported that this practice originated during a period of time when the City was experiencing difficulty in meeting their next-day inspection performance standard. It is also reported that contractors that engage in this practice are not routinely penalized through the assessment of additional re-inspection fees. Based on a review of the City reports from AMANDA, customers should be able expect that their inspection request

will be honored at least 90% of the time. Allowing this practice to continue also creates the appearance of a system that rewards contractors that violate the spirit of the inspection request process and penalizes other contractors by not allowing them to receive their inspections because their assigned inspector is "tied-up" on jobs that are not ready. Other jurisdictions have implemented these re-inspection fees successfully by imposing the extra fee after the applicant has failed two (2) inspections because the work was not ready.

64. ***Recommendation:*** **The Building Official should encourage the assessment of re-inspection fees on residential projects that demonstrate a pattern of calling for inspection before the work is completed.**

Staffing Levels

The tables and figures below indicate the inspection activity levels for the last seven (7) years. These tables are specific to each inspection group and reflect considerable variation between the groups. We generally find that a range of between 10 and 15 inspections per day per inspector provides sufficient time for inspectors to perform quality inspections and still participate in meetings and training classes. There are factors that can influence this range either up or down. These factors can include excessive travel time, complexity of projects to be inspected, and the method used to count the inspections. Given that the City of Austin has implemented a program to have inspectors park their vehicles at various off-site locations in general proximity to their inspection districts, and that the inspectors only come to the main office once per week, we do not believe excessive travel time is a significant factor.

Many jurisdictions simply count the number of stops (construction address) assigned to an inspector, while Austin counts the number of inspections performed, including when multiple inspections are performed at a single location. For example a framing inspection request for combination inspectors can result in counting three (3) inspections for that single stop (ex: framing, rough plumbing, and rough mechanical inspection). While there is nothing inherently wrong with this approach, and in fact it highlights the benefit of having a combination inspector program by allowing a single inspector to perform more than one type of required inspection on the site, the counting method needs to be factored into the overall target number. This way of counting would tend to increase the amount of daily inspections that are reasonable. This affect is offset somewhat for the combination inspections because these inspectors are also expected to perform a level of plan review in the field that we have not observed in other jurisdictions. With this additional burden for performing plan reviews in the field, it should be expected that the number of quality inspections that can be performed per day be in the lower range of our recommended inspections per day. A review of monthly inspection data provided to us indicated a range from a high of 28.9 for Residential Combination Inspectors to a low average of 12.3 for Commercial Mechanical. It should be noted that these numbers were generated based on

a total of 249 business days per year (accounting for holidays). Our recommended range of inspections per day per inspector is consistent with our use of this method in other jurisdictions nationally. It should be noted that AMANDA does not currently reflect combination inspections done at a single sit;, nor multiple inspections at a single site.

Table 22
Residential Combination Inspections

Residential	Avg. Insp/Month	FTEs	Avg/Inp/Day/Inspector
FY 07-08	114,160	22	20.8
FY 08-09	88,040	19	18.6
FY 09-10	71,655	12	24.0
FY 10-11	86,295	12	28.9
FY 11-12	99,774	17	23.6
FY12-13	115,393	17	27.3
FY 13-14	115,138	16	28.9

From the table above it is clear to see that the average number of inspections performed per inspector per day is substantially above the range we have recommended for other jurisdictions in the past. Current staffing (16) is also significantly below the number of inspectors (22) available during the City's previous peak period of FY 07-08, which was prior to the implementation of many new code requirements. To bring the average number of inspections per day per inspector in alignment with our traditional recommendation would necessitate nearly doubling the number of existing residential combination inspectors. This level of increase appears to be excessive given the historical staffing levels maintained in the group. A more reasonable approach would be to add ten (10) additional positions at this time and then closely monitor the activities of this group to confirm that both qualitative and quantitative performance standards are being achieved. Adding these additional positions would bring the average number of inspections per day per inspector to 17.8. While this number is still above our recommended range of 10 to 15, we believe this variance is an appropriate response to reflect the efficiencies gained by utilizing a combination inspection program. The addition of ten (10) combination inspector positions should be accompanied by the addition of two (2) first-line supervisor positions in order to maintain an adequate span of control. This would be particularly important given the anticipated close supervision that should be afforded new employees. While we are recommending a total of ten (10) additional combination inspectors be hired to reduce the average number of inspections per day per inspector to be consistent with what we believe are best practices observed in other jurisdictions, we also recognize that doing so would have a significant impact on

the operations. We therefore recommend that the process of adding additional combination inspection staff and supervision be approached with a two-phase project. The initial phase would be to add there (3) combination inspectors and a supervisor. Once these additional inspectors have been successfully trained and incorporated into the daily inspection scheduling, then it will be possible to make a much more accurate evaluation of the impact of these additional resources on the Division's operations and the potential need to hire additional staff.

65. ***Recommendation:*** **The Building Official should hire the equivalent of three (3) additional Combination Residential Inspectors and one (1) supervisor as part of a multiphase staffing augmentation program.**

66. ***Recommendation:*** **After hiring the first phase of additional combination inspectors, the Building Official should evaluate the need to hire additional combination inspectors and a supervisor in order to improve quality and training and reduce daily workload to an acceptable level.**

A practice we see successfully implemented in other jurisdictions experiencing increased workload is the use of contract staff. We support this practice because it allows jurisdictions to quickly react to changing staffing needs and reduces the turmoil associated with the practice of hiring full-time staff and then quickly laying them off. It also gives management the opportunity to more accurately evaluate the likelihood of whether a current spike in workload activity will be sustained for an extended period in the future. Another benefit that jurisdictions have received by initially utilizing contract staff is they have an opportunity to evaluate the quality of work provided by the contract staff. Many times well-qualified contract staff ultimately becomes successful full-time employees of the jurisdiction. Use of qualified contract staff can also provide welcome relief for those current inspectors and supervisors who are tasked with the on-going responsibility to both perform inspections and train new staff.

In Chapter II, Recommendation 49 we recommend use of additional staff or consultants as necessary to meet performance standards.

A review of the inspection history for the remaining groups (Electric, Commercial Building, Commercial Mechanical, and Commercial Plumbing) indicates that they have been able to respond to inspection requests within the established performance standards by adjusting staffing levels in proportion to the increase or decrease in annual inspection requests and using overtime/comp time. The current staffing levels for these groups seems to be appropriate to meet the next day inspection standard; however, as the Section places more emphasis on enhancing uniformity and consistency among the inspector

ranks it may be necessary to add additional staff to compensate for the lost field time dedicated to additional training.

Table 23
Electric Inspections

Electric	Total Inspections	FTEs	Avg/Inp/Day/Inspector
FY 07-08	45,002	12	15.1
FY 08-09	38,157	10	15.3
FY 09-10	33,316	10	13.4
FY 10-11	35,644	10	14.3
FY 11-12	40,786	11	14.9
FY12-13	48,067	12	16.1
FY 13-14	53,429	14	15.3

Table 24
Commercial Building Inspections

Commercial Building	Total Inspections	FTEs	Avg/Inp/Day/Inspector
FY 07-08	26,137	6	17.5
FY 08-09	21,174	6	14.2
FY 09-10	21,005	6	14.1
FY 10-11	19,124	6	12.8
FY 11-12	17,806	6	11.9
FY12-13	24,519	6	16.4
FY 13-14	25,888	7	14.9

Table 25
Commercial Mechanical Inspections

Commercial Mechanical	Total Inspections	FTEs	Avg/Inp/Day/Inspector
FY 07-08	14,922	4	15.0
FY 08-09	9,133	3	12.2
FY 09-10	7,406	3	9.9
FY 10-11	7,387	3	9.9
FY 11-12	7,536	4	7.6
FY12-13	11,071	4	11.1
FY 13-14	12,209	4	12.3

Table 26
Commercial Plumbing Inspections

Commercial Plumbing	Total Inspections	FTEs	Avg/Inp/Day/Inspector
FY 07-08	22,250	8	11.2
FY 08-09	21,350	8	12.1
FY 09-10	16,846	7	10.9
FY 10-11	18,017	7	11.7
FY 11-12	19,956	5	18.1
FY12-13	21,475	6	16.3
FY 13-14	22,938	6	15.4

Table 27
Total Inspections

Total Inspections	Total Inspections	FTEs	Avg/Inp/Day/Inspector
FY 07-08	222,471	52	17.2
FY 08-09	177,854	46	17.6
FY 09-10	150,228	38	18.0
FY 10-11	166,467	38	19.9
FY 11-12	185,858	43	19.6
FY12-13	220,525	46	21.8
FY 13-14	229,602	47	19.6

It is recognized that the process of adding new staff can be very burdensome for existing staff and generally has a negative impact on the group's ability to continue to respond to an increased workload. This impact will continue, not only through the actual hiring process, but last until the new employee is deemed fully capable of performing the full range of inspections appropriate for the position. Frequently this ride-along training process can take up to a year or more. During this period, not only does the City miss the benefit of a fully trained new employee, but the effectiveness of the Inspector assigned the training role is reduced. Many jurisdictions have recognized and addressed these challenges by temporarily employing qualified contract staff or by temporarily bringing back recently retired employees on a part-time basis until the new staff has become fully trained. This approach helps ensure that the existing inspection workload is being addressed and helps avoid employee burnout for those individuals tasked with the responsibility of completing both their daily inspections and training new employees.

67. ***Recommendation:*** **The Department should temporarily hire qualified contract inspectors, recently retired inspectors, or third party inspection firms to perform routine inspections while new inspectors are being hired and until they are fully trained.**

D. POLICY ISSUES

Code Adoptions

Unlike many other states, the State of Texas does not mandate that local jurisdictions adopt and enforce a specific set of construction codes. This list of adopted codes in Austin generally represents the most current editions of the nationally recognized codes. The Department should be commended for adopting the current set of codes. While we generally recommend that jurisdictions adopt a set of codes that utilize a process that helps assure compatibility among the codes, the political forces present in Austin has led to an approach that incorporates codes adopted by both the International Code Council (ICC) and the International Association of Plumbing and Mechanical Officials (IAPMO). In some cases, trade codes published by both organizations have been adopted in order to fully address the types of projects that Austin routinely reviews. We also encourage jurisdictions to minimize the number of local amendments that they incorporate into their local code adoption process. We feel that the existence of a large number of local amendments helps contribute to confusion on the part of both designers and contractors. As Austin continues to compete to attract world-class development, the need for designers to comply with both a combination of national codes and a large volume of local amendments might be a disincentive for some nationally recognized design firms to participate in design competitions in Austin. In addition, contractors working in multiple

jurisdictions in the region are placed under an additional burden to know and apply these differing regulations based on which jurisdiction they have chosen to build in.

Those Codes adopted with amendments by the City of Austin include the following:

- International Building Code, 2012 Edition (ICC)
- International Residential Code, 2012 Edition (ICC)
- International Existing Building Code, 2012 Edition (ICC)
- International Plumbing Code, 2012 Edition (ICC)
- International Mechanical Code, 2012 Edition (ICC)
- International Fuel Gas Code, 2012 Edition (ICC)
- International Property Maintenance Code, 2012 Edition (ICC)
- Uniform Mechanical Code, 2012 Edition (IAPMO)
- Uniform Plumbing Code, 2012 Edition (IAPMO)
- Uniform Solar Energy Code, 2006 Edition (IAPMO)
- International Energy Conservation Code, 2012 Edition (ICC)
- National Electrical Code, 2011 Edition

68. ***Recommendation:*** **The Building Official should adopt the International Code Council set of national codes in order to achieve a more harmonized set of codes.**

69. ***Recommendation:*** **The Building Official should work to eliminate existing local code amendments whenever possible.**

Expired Permits Program

The City of Austin has implemented a very comprehensive program to identify properties with expired permits. While we support the need for obtaining permits for construction projects, it appears to us that the City of Austin has taken the obligation to resolve all expired permits to a level that we have not seen anywhere else in the country. Comments from customers and staff reveal that frequently the existence of an expired permit does not become known until the customer is ready to obtain a new permit for unrelated work. In many cases these expired permits are decades old and have little or no impact on the life safety of those individuals utilizing the property. Resolving these expired permits usually requires a very large expenditure of resources on the part of City staff and the

applicant. When a life safety issue has been previously identified through code enforcement action, we agree it is appropriate that the City focus resources as necessary to resolve the outstanding life safety issues. Many jurisdictions will have the existence of these violations also recorded in the County Recorder's Office so that the issue can be identified during routine Title searches. However, for the very large proportion of expired permits that do not represent a life safety concern we question if resolving these minor permits represents an efficient use of City resources. Many jurisdictions we have studied do not have any follow-up program for expired permits while others send notification letters alerting customers of the pending expiration of their permit. In other cities, the field inspectors are provided with lists of properties that have permits nearing expiration and are assigned to incorporate these properties into their daily inspection schedule. These inspections are treated similar to their other inspection requests and contribute to identifying the average number of inspections performed per day per inspector so they can be considered in determining appropriate staff levels. These jurisdictions believe they have satisfied their obligation by providing these notices. They cite the language in the adopted Codes that clearly place the obligation for calling for inspections on the permit holder rather than the jurisdiction. In those cases where the City believes there is a pattern by a contractor of not calling for final inspections and that such a practice jeopardizes the public welfare, then the City may choose to utilize the capabilities of the AMANDA program to identify these repeat offenders. Such offenders could be notified by mail and, if they fail to address the outstanding permits, they could be referred to the appropriate State Licensing Board for potential disciplinary action.

70. ***Recommendation:*** **The Building Official should reevaluate the existing expired permit program and redirect resources to only those projects with outstanding life safety issues.**

71. ***Recommendation:*** **The Building Official should have staff identify projects with expired permits that represent life safety concerns and have those concerns recorded against the property.**

72. ***Recommendation:*** **The Building Official should assign inspectors to conduct site visits on projects with current permits that are approaching their expiration date.**

73. ***Recommendation:*** **The Building Official should treat expired permit inspections similar to other inspections for the purpose of establishing minimum required staffing levels.**

Another area to consider for revision in the current permit expiration program is the timelines established in the adopted codes that trigger expiration of the permit. Other

jurisdictions that have been faced with a high workload associated with monitoring expired permits have chosen to modify their code language. Rather than have permits expire when no activity has transpired on the project for 180 days, they have extended this provision to 365 days prior to expiration. This has reduced staff's workload and there have been no reports that this change has created any significant fire and life safety problems.

74. ***Recommendation:*** **The Building Official should modify the code to extend the period that a permit can remain active to 365 days without inspection rather than the current 180 days.**

Special Inspections

The City of Austin has adopted Chapter 17 of the International Building Code covering Special Inspections and Testing. While the term special inspection as it applies to Austin covers inspections for electrical change-outs and water heater change-outs, in most other jurisdictions the term "special inspections" refers to inspections performed by highly qualified inspectors who observe and test the placement of specialized structural components during construction. Examples of these components include the placement and testing of high-strength concrete, structural steel welding, and certain types of masonry and prefabricated wood components. Third-party inspectors who have demonstrated their competence through achieving nationally recognized certifications in the field for which they are assigned to inspect perform these inspections. Given the quantity and type of large commercial construction projects under construction in the City of Austin, it must be assumed that there is a large demand for these types of inspections.

Communities with substantial commercial construction typically have a section of the building department assigned to ensure that special inspections are being properly performed. Employees in this section monitor the work of the approved Special Inspectors and initiate appropriate disciplinary actions when their work does not meet minimum standards. Employees in this section typically have experience and certifications in the specialized fields and the section is under the supervision of a qualified engineer. Staff interviews failed to reveal the existence of this type of special inspection monitoring program. Examples of highly respected Special Inspection Programs include Clark County, NV; Phoenix, AZ; and Kansas City, MO. The building Official should contact these jurisdictions to gain an understanding of the scope and effectiveness of their programs.

75. ***Recommendation:*** **The Building Official establish a program to monitor the effectiveness of third-party Special Inspectors assigned to projects in Austin.**

E. PROCESS ISSUES

Electrical Inspections of Utility Services

Employee surveys and our interviews with staff identified a high level of concern about the current practice of directing Department Electric Inspectors to perform inspections based on criteria established by staff from Austin Energy and not contained within the City's adopted provisions of the National Electrical Code. Some staff comments suggested that they are uncomfortable in conducting these types of inspections due to lack of training specific to those types of distribution related installations and concerned about their authority to perform such inspections. We are not in a position to provide specific recommendations on resolution of this conflict, but we do believe that it needs to be brought to the forefront so that appropriate management staff can develop a procedure that adequately addresses all party's concerns. It is our understanding that the Electric Board may have been reviewing this issue within the last twelve months.

76. ***Recommendation:*** **The Chief Electrical Inspector should meet with Austin Energy staff to discuss and resolve inspector concerns about inspecting per utility standards. This should be memorialized in an MOU.**

Field Inspector Computers

We believe it is essential for field inspection staff to have real-time access to the permit system database via wireless connections between their field computers and the permit system server. Having reliable access to permit and inspection information allows the inspectors in the field to easily adjust their inspection schedules to respond to changing conditions and also gives customers near instantaneous access to inspection results. Unfortunately, for many inspectors the current wireless arrangement results in numerous "dropped" connections every day. For those inspectors experiencing this problem the procedure for logging back into the system is both cumbersome and time consuming. We have been advised that some of the existing tablet computers (Toughbooks), while several years old, have recently been internally upgraded in an effort to enhance the reliability of the wireless connection. Inspectors using these upgraded field computers

have indicated that the upgrades have improved performance but there are still issues with reliable connectivity.

77. ***Recommendation:*** **The IT Department should expedite the current process of upgrading existing inspector field computers to enhance in-field communication reliability.**

Front Counter

Often customers arriving at the first floor PDRD office are directed to the third floor Inspections Counter in anticipation that that general questions can be answered. The role of the staff assigned to the Inspections Counter frequently involves calling on one of the Inspections Supervisors to come to the counter to respond to the routine question being asked by the customer. Staff interviews suggest that it is rare for a customer to ask a question that demands the knowledge and experience of a supervisor. Having supervisors interrupted to respond to these types of requests is not an efficient use of them as a resource. As a minimum, a list of frequently asked questions should be compiled and available to the staff at the counter so they can take a more aggressive role in responding to these routine questions. In the long term, these positions should be required to have a minimum level of technical knowledge that would allow them to be more responsive to customer inquiries. The International Code Council (ICC) offers training programs and recognition as a Certified Permit Technician upon passing an exam. Staff with this type of Certification should be expected to provide a greater level of customer service at the counter and also help relieve supervisors from responding to routine counter inquiries. Establishing a minimum requirement of obtaining recognition as a Certified Permit Technician for the Inspections Counter should also trigger consideration for reclassification of the position. An alternative to requiring Certification as a Permit Technician would be to utilize Customer Service Representatives that have demonstrated an appropriate level of technical knowledge to allow them to relieve the Inspection Supervisors of the responsibility to answer routine questions.

78. ***Recommendation:*** **Inspections front counter staff should receive sufficient training to become qualified to relieve supervisory staff of the burden to respond to the counter to answer routine customer questions.**

Inspection Request Process

While we have identified the City's efforts to allow customers to request inspections through Interactive Voice Response (IVR) system or on-line as a positive accomplishment, there are areas where these systems can be further enhanced. Both Inspectors and customers have commented that the IVR system seems to be overly complex and lacking in flexibility. Customers cite examples of the difficulty in requesting multiple inspections at a single property. Such requests apparently require the customer to exit the system and re-enter again to request multiple inspections. In addition, contractors complain that it is not easy to gain access to a full description of the corrections that an inspector has entered into the system when they consist of multiple lines of text. We recognize that programming an IVR system can be complex if numerous restrictions are placed on use; however, the volume of complaints regarding the current system suggests that the City explore opportunities to further streamline the inspection request process. Our experience has shown that sharing information with other jurisdictions that are also using the same IVR software often leads to ideas for improved performance.

79. ***Recommendation:*** **The existing IVR system should be modified or replaced to reduce complexity and add flexibility for customer use.**

80. ***Recommendation:*** **The Chief Building Inspector should research what technologies or IVR systems other jurisdictions are using that would improve the customer's experience.**

Inspection Routing and Posting

A common source of frustration expressed by inspectors is the large number of daily requests they receive from customers inquiring about the inspector's anticipated time of arrival. Inspectors state that they must spend a substantial portion of their day responding to these inquiries rather than actually performing inspections. During our staff interviews a number of possible solutions to address this problem were discussed. The elimination of the use of pagers in favor of exclusive use of cell phones would help reduce the steps necessary to get back with the customer, but this would only be a partial solution. Ultimately, it was suggested that a process be developed to allow each inspector to post his/her inspection schedule directly to the City's website. While not a perfect solution, such a process would provide customers a general idea of the time of the day when they should expect the inspector based on where their project was listed on the inspector's daily schedule. We believe this additional information would be sufficient for the vast majority of customers. For example, a customer knowing that their project was listed 12th

on a list of 15 inspections for the day could anticipate the inspection would be in the early afternoon.

81. ***Recommendation:*** **The Chief Building Inspector should work with the IT staff to allow the inspectors daily schedule to be posted online for customers to view.**

Inspector Cell Phones

Numerous employee surveys and interview responses stated that the City's current policy regarding the use of cell phones as means of communication with inspectors in the field as well as customers' needs to be revised in order to enhance customer service. Currently the City provides individual inspectors with a stipend to assist them in paying for their personal telephones. One of the negative repercussions of this policy is that Inspectors are not permitted to make their cell phone numbers available to the public based on the premise that the phones are the personal property of the individuals. Regardless of the appropriateness of this interpretation, we believe that both customers and Inspectors in the field should have the ability to easily communicate as needed to make the inspection process efficient. The current system relies on customers to contact the inspector through pagers and then necessitates the Inspector to call the individual back when they are available. It is easy to see why this arrangement has led to a high level of dissatisfaction on the part of customers. The inability to reach an inspector was one of the most frequently cited complaints in the customer surveys we collected. Rather than rely on old technology pagers and personally owned cell phones, the City should purchase cell phones for all field inspectors and require them to provide those cell phone numbers to the public so they can be contacted during normal working hours.

82. ***Recommendation:*** **The use of pagers and personal cell phones should be abandoned in favor of City owned cell phones provided to field inspectors.**

83. ***Recommendation:*** **The cell phone numbers of all phones provided by the City to field inspectors should be available to the public via business cards and website directories.**

Interpretation and Procedures Manuals

The Department has established an extensive list of procedures and interpretations under the heading of Building Criteria Manual. A brief review of the criteria indicates that many subjects are covered in only the broadest terms and would therefore benefit with the addition of more detailed description of the intended procedure to be followed. In addition, some criteria use outdated information (ex: Section 4.8.0 (C)) Energy Code Compliance references inspectors certified by the International Conference of Building Officials (ICBO) rather than the current organization of International Code Council (ICC). Staff should review this Manual and sections should either be updated or deleted as needed to reflect current requirements. We understand that PDRD staff will be meeting with HBA to review the Criteria Manual which is excellent. In addition, interviews with several staff members indicated that there is a common practice in place for staff to store relevant information on the City's "G" drive. While we support the need to maintain copies of approved policies and procedures, the informal use of the "G" drive to store important information, such as revised staff procedures, invites communication gaps. The information on the "G" drive should be reviewed and documents that should be shared with staff should be identified and subjected to an appropriate internal review process so they can be validated and then placed in a more appropriate location that is indexed and available to all impacted staff (ex: SharePoint).

84. ***Recommendation:*** **The Building Criteria Manual should be carefully reviewed and updated to reflect the Department's current policies and procedures.**

85. ***Recommendation:*** **The Building Official should direct staff to review the contents of the City's internal "G" drive and relocate pertinent documents into the Criteria Manual or other approved locations readily available to staff.**

Roll-Over Inspections

A component of maintaining good communication with customers is notifying them when their customer service expectations cannot be met. We believe a lack of timely communication to be a major contributor to the often-cited statement by customers that there is a lack of trust between customers and City staff. An example of failed communication is when an inspector assigned to perform an inspection at a job site fails to notify the customer when he/she is unable to perform the inspection on the day requested. Inspector interviews indicated that they are under no direction to attempt to contact customers to advise them they will not be receiving their inspection on the day requested. It has also been reported that it has not been normal practice to contact other

inspectors in the field to request assistance when it is apparent that the inspector will not be able to complete the assigned inspections. Many jurisdictions have established a process that requires all inspectors "check-in" with their supervisors in the early afternoon to confirm they anticipate completing their assigned inspections. This process helps identify those inspection areas that may need additional inspector assistance and which inspectors may be available to assist. A general statement supporting this concept has been incorporated into the Building Criteria Manual (Section 1.1.4 – Completions in a Timely Manner) but it apparently is not being emphasized by current supervisory staff.

86. ***Recommendation:*** **The Building Official should direct all inspection staff to notify customers when they will not be able to perform the inspection on the date requested.**

87. ***Recommendation:*** **The Building Official should direct Inspections Supervisors to develop and implement a process that allows inspection workload to be redistributed as needed to help ensure all outstanding inspection requests are honored.**

F. QUALITY CONTROL

Overview

A review of both the customer supplied comments and employee surveys revealed that there is a significant problem with lack of consistency in the way field inspection staff conducts their inspections. Our experience has indicated this problem arises when there are insufficient resources allocated to the quality control program.

An effective quality control program must include several components. Such a program would include minimum education, experience and certifications, on-going training program, establishing and measuring employee performance standards, a comprehensive auditing program and integrations of audit results into periodic employee performance evaluations. Each of these components will be discussed below along with specific recommendations.

Field Audit Program

Providing comprehensive on-going training programs and establishing employee performance standards will establish a set of expectations, however, to ensure that a high quality inspection program is actually being achieved in the field it is essential that individual inspector performances be audited in the field. Such a program would consist of periodic inspector/supervisor ride-alongs, supervisors conducting on-site interviews with contractors regarding inspector performance, and the mailing of customer comment

survey forms to contractors at the conclusion of a project. As mentioned above, these field audits also provide the supervisor the opportunity to identify inconsistencies between inspectors so that those subjects can be addressed during future in-house training sessions.

88. ***Recommendation:*** **The Building Official should direct the inspections supervisors to implement a comprehensive audit program.**

In-House Training

The Department has made a significant commitment to training staff through an annual three (3) day off-site training program presented by national and regional experts. We support such programs but also believe the key to providing uniform and consistent field inspections lies in having a comprehensive on-going in-house training program. Such a program would allow supervisors to provide clear direction to staff regarding how specific sections of the adopted codes should be enforced in the field. Such a program would include a written training schedule to ensure all pertinent subjects were being addressed. Subjects to be included in the program should be a reflection of any inconsistencies observed by the supervisors during field audits. Additionally, an attendance sheet should be kept for each session to confirm all staff has had an opportunity to benefit from the training.

89. ***Recommendation:*** **A comprehensive on-going in-house training program should be established for each inspection group.**

An example of an area that we believe warrants some additional training emphasis is inspection of qualifying historical properties. Customer surveys and comments provided during meetings with neighborhood groups suggest that subject area may not be receiving the attention that the neighborhood residents and business owners believe is needed to ensure their community is properly preserved.

90. ***Recommendation:*** **The inspector training program should include a program on inspecting properties for historical preservation.**

Minimum Employment Qualifications

The key component to providing a quality inspection program begins with the hiring of individuals who meet the minimum experience, education, and certification qualifications for the position. A typical way of demonstrating that employees are capable of performing their responsibilities as an inspector is to require the inspector to possess the nationally recognized certifications appropriate to their specific assignment. These certifications are available through a testing process administered by the International Code Council (ICC) and International Association of Plumbing and Mechanical Officials (IAPMO). The State of Texas has also established minimum qualifications for inspectors who inspect electrical or plumbing installations.

The City of Austin has done an excellent job in recording and tracking the certifications obtained by each inspector and has a program in place to ensure that each inspector is knowledgeable of their responsibility to keep those certifications current. Certifications expire unless the individual has accumulated a specified number of Continuing Education Units (CEUs) specific to their certification category. The City should be commended for their practice of reimbursing staff for the cost of obtaining, renewing, and attending training in order to retain these certifications.

A reality faced by many jurisdictions, including Austin, is that it is not always possible to attract applicants who possess all of the required certifications prior to appointment. The City therefore has established a probationary period during which a newly hired employee has the opportunity to obtain the required certifications within a specified period of time from their hire date. Staff interviews suggested that the tests to qualify for certification as a State electrical and/or plumbing inspector are very rigorous and extremely difficult to pass unless the candidate has considerable construction experience in the designated field.

It has been our practice to encourage the use of combination residential inspectors as a means of providing greater efficiency in the field. By allowing a single qualified inspector to conduct building, electrical, plumbing, and mechanical inspections during a single visit to a site considerable efficiency can be gained. Generally, these inspectors have achieved certification as a Residential Combination Inspector through ICC. This option is not currently available to the City of Austin due to the requirement that State Licensed Inspectors qualified in these fields perform all electrical and plumbing inspections. The length of time necessary to obtain the minimum knowledge and experience in the plumbing or electrical field tends to preclude individuals from obtaining the qualifications in both fields. Currently, the combination residential inspection program for the City of Austin consist of an individual inspector performing building, plumbing, and mechanical inspections, and an additional electrical inspector be assigned to perform the electrical inspection on the residential work. This type of program has a built-in bias towards providing a high quality plumbing inspection and, unfortunately, the potential for less attention given to the other trades. Nationally, participants in

combination residential inspection programs tend to have strong trade experience in structural framing and then obtain the additional skills in electrical, plumbing and mechanical inspection necessary to pass the Residential Combination Inspector Certification exam. Recently, the Department has attempted to address this potential concern by hiring individuals with strong building backgrounds rather than extensive plumbing trade experience. Unfortunately, this has led to a situation where the new employees have been unable to obtain the required State Plumbing Inspector License and therefore must be either reassigned or terminated.

While we agree that the complexity of commercial construction warrants special attention that may only be achievable by inspectors who have significant field experience in the chosen discipline, we believe there should be opportunities to use residential combination inspectors for one and two family dwelling construction.

91. ***Recommendation:*** **The Department should work with State to encourage the development of a Residential Combination Inspector Program based solely on ICC Certification as a Residential Combination Inspector.**